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PRELIMINARY REGULATORY EVALUATION

Docket RSPA-02-13658 (HM-215E) -5

Harmonization with the United Nations Recommendations, International Maritime Dangerous Goods Code, and International Civil Aviation Organization's Technical Instructions

November 2002

Background

RSPA is proposing to amend the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) by incorporating various changes to proper shipping names, hazard classes, packing groups, special provisions, packaging authorizations, air transport quantity limitations, and vessel stowage requirements. In addition, we are proposing to revise the HMR applicable to shipping paper and marking requirements. We analyzed these proposed changes to determine the economic effects of the revisions on the regulated industry.

Statement of Problem

Transportation of hazardous materials in commerce is subject to requirements in the HMR, issued under authority of the Federal hazardous materials transportation law, codified at 49 U.S.C. 5101 *et seq.* To facilitate the safe and efficient transportation of hazardous materials in international commerce, the HMR provide that both domestic and international shipments of hazardous materials may be offered for transportation and transported under provisions of the International Civil Aviation Organization's Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Technical Instructions), the International Maritime Organization's International Maritime Dangerous Goods Code (IMDG Code), or the Transport of Dangerous Goods (TDG) regulations promulgated by Transport Canada, as appropriate. Basic requirements of the HMR, the ICAO Technical Instructions, the IMDG Code, and the TDG regulations are based on the United Nations Recommendations on the Transport of Dangerous Goods (UN Recommendations).

Uniformity of national and international hazardous materials transportation regulations is critical to safety and trade facilitation of hazardous materials transportation. Consistency between U.S. and international regulations enhances the safety of international hazardous materials transportation through better understanding of the regulations, an increased level of industry compliance, the smooth flow of hazardous materials from their points of origin to their points of destination, and consistent emergency response in the event of a hazardous materials incident. In addition, many shippers find that consistency in requirements aids their understanding of what is required, thereby permitting them to more easily comply with the regulations when shipping hazardous materials in international commerce.

Inconsistent hazardous materials regulations result in additional compliance costs for industry and hamper compliance training efforts. A simple inconsistency in regulatory requirements, such as a different package marking, could result in significant additional costs. The foreign trade of chemicals is a large segment of the United States economy, and in the year 2000, totaled $154 billion in trade and generated a $6 billion positive trade balance. The

consistency of regulations reduces regulatory compliance costs and helps to avoid costly frustrations of international shipments. RSPA's continued leadership in maintaining consistency with international regulations enhances the hazardous materials safety program and assists in maintaining a favorable trade balance.

For ease of compliance with appropriate regulations, international carriers engaged in the transportation of hazardous materials by aircraft generally elect to comply with the ICAO Technical Instructions, while vessel operators generally elect to comply with the IMDG Code. By maintaining consistency between these international regulations and the HMR, shippers and carriers are able to train their hazmat employees in a single set of requirements for classification, packaging, hazard communication, handling, stowage, etc., thereby minimizing the possibility of improperly transporting a shipment of hazardous materials because of differences between national and international regulations.

The continually increasing quantities of hazardous materials transported in international commerce warrants the harmonization of domestic and international transportation requirements to the greatest extent possible. The IMDG Code and ICAO Technical Instructions are not the only regulations affected by changes to the UN Recommendations. Most national and regional regulations (for example, European road and rail regulations, South American regional regulations, etc.) are also consistent with international regulations. This includes some of the United State's largest trading partners, including Mexico, Canada and Japan.

Effective January 1, 2003 the international regulations for air (i.e. 2003-2004 edition of the ICAO Technical Instructions) and sea (Amendment 31 of the IMDG Code) transport will be updated consistent with the twelfth revised edition of the UN Recommendations. RSPA actively participates in the process of developing the revisions to the ICAO Technical Instructions, the IMDG Code and the UN Recommendations and represents the interests of the United States in negotiating the revisions. In this respect, RSPA attempts to ensure that revisions either enhance or maintain the level of safety, do not impose unnecessary or unjustifiable costs, and do not impose barriers to trade. RSPA continually works to harmonize the international and domestic standards by minimizing differences between the requirements of the HMR and international standards through the rulemaking process. This rulemaking proposes to maintain alignment with international standards by incorporating various changes as highlighted below.

Alternatives Considered

The goal of this rulemaking is to facilitate the safe transportation of hazardous materials in international commerce. In developing this final rule, we considered three alternatives:

1. Do nothing.

2. Adopt the International Standards in Their Entirety.

3. Adopt the applicable changes as proposed in the NPRM.

Alternative 1: Do Nothing

The United States is an active participant in the development of uniform international standards for transporting hazardous materials. Because all major countries and international carrier organizations have or will adopt the changes proposed in this rulemaking, a do-nothing approach would result in complications in the movement of these materials. Future inconsistencies with international transport standards may result in foreign authorities refusing to accept hazardous material shipments prepared in accordance with the HMR. To successfully participate in international markets, U.S. companies would be required to conform to dual regulations. Because the additional cost to comply with dual systems of regulations will hinder the goal of facilitating the safe transportation of hazardous materials in international commerce, we rejected the do-nothing alternative.

Alternative 2: Adopt the International Standards in Their Entirety

Under this alternative, all revisions to the ICAO Technical Instructions, the IMDG Code and the TDG regulations would be incorporated into the HMR. There are instances when we believe that the international standards are not sufficient to adequately protect against the risks inherent in the domestic transportation of hazardous materials in commerce. In such instances, we believe more stringent regulations for domestic transportation of hazardous materials are necessary. For example, we are proposing to include hazardous materials that are forbidden by passenger and cargo aircraft in the restrictions for the use of the ICAO Technical Instructions. In addition, we elected not to propose adoption in the HMR of various other amendments incorporated in the international standards for the same safety-related reasons. Based on these reasons, we rejected Alternative 2.

Alternative 3: Adopt the Applicable Changes as Proposed in the NPRM

Alternative 3 is the only alternative that addresses, in all respects, the purpose of this regulatory action, which is to facilitate the safe and efficient transportation of hazardous materials in international commerce. Alternative 3 simplifies the HMR, improves safety in transportation, and aids in maintaining U.S. competitiveness in both international and domestic markets. The revisions in the proposed rule are necessary for U.S. companies to successfully participate in international markets. If the revisions in the proposed rule are not adopted, U.S. companies would be at an economic disadvantage by being forced to conform to dual regulations. The additional cost to comply with a dual system of regulations would hinder the goal of facilitating the safe transportation of hazardous materials in international commerce. For these reasons, Alternative 3 is our recommended alternative.

Based on the analysis of potential costs and benefits considered in this document, and on our findings in the final regulatory evaluation conducted in support of Docket HM-181, the

amendments in this proposed rule, if adopted will not have a significant economic impact on a substantial number of small entities.

Benefit-Cost Assessment

This NPRM proposes a wide range of changes to the HMR. Many of the proposed changes, if adopted, would result in immediate cost savings while others would entail some initial costs, but would result in long-term cost reductions. For example, we are proposing to provide certain exceptions such as a placarding exception for sulfur and molten sulfur when the UN number is displayed on bulk packagings, and a packaging exception for large hard-cased robust lithium batteries. These exceptions would result in immediate costs savings. The proposed revisions to eliminate the differences between the HMR and international standards with regard to revisions to the shipping paper requirements would impose initial start-up costs for companies reprogramming computer systems, but would ultimately effect greater cost savings. The cost savings would be realized by eliminating the additional costs associated with complying with two sets of regulations.

Substantive changes in this rule include:

1. Amendments to the Hazardous Materials Table (HMT).

2. Addition of an air eligibility marking requirement.

3. Addition of a requirement to include types of packagings on shipping papers.

4. Addition of a requirement to enter the subsidiary hazard class or subsidiary division number on shipping papers. This requirement was previously permissive, but not mandatory.

Amendments to the Hazardous Materials Table (HMT). We are proposing to amend the HMT by adding, revising, or removing certain proper shipping names, hazard classes, packing groups, special provisions, packaging authorizations, bulk packaging requirements, passenger and cargo aircraft maximum quantity limitations, and vessel stowage requirements. Many of these proposed revisions would improve the accuracy of the shipping descriptions applicable to specific hazardous materials, thereby providing a more accurate and complete indication of the hazards related to a specific shipment. Eliminating the differences between proper shipping names and hazard classifications, including subsidiary hazards, would assure that shippers and carriers do not have to re-mark or repackage hazardous materials that are offered in both domestic and international transportation. In addition, shippers would not need to revise shipping papers when shipping descriptions differ in domestic and international regulations. Further, the proposed revisions to the HMT would result in improved hazard communication for many hazardous materials, thereby enabling emergency response personnel to more quickly and efficiently identify hazards and mitigate potential risks to the public and the environment.

The cost impact from these changes would be minimal. Initial start-up and inventory costs would result from these changes, however, the costs would be offset by the greater long-term savings of conformance with one set of regulations and a 15-month transition period. They include costs to effect changes for reprogramming shipping paper computer programs, replacement of pre-printed forms for those firms that do not use automated systems, and changes to package markings and labels. Additional training resulting from these changes generally can be accomplished within the existing three-year training cycle, resulting in minimal additional training costs, if any.

Addition of an air eligibility marking. We are proposing to require a new marking for non-bulk packagings offered for transportation or transported by aircraft. The marking would represent a shipper's certification that all applicable transportation requirements for air transport have been met, such as, pressure differential requirements, package markings and labels, inner packaging limits, selection of appropriate types of packagings, use of closure instructions for inner packagings, application of the cargo aircraft handling label, when applicable, and proper classification. The use of an air eligibility mark would help to heighten shipper awareness of specific transportation requirements for air shipments, reduce the inadvertent acceptance for transportation by aircraft of packages that conform only to highway, rail or vessel requirements, improve conformance with air transportation requirements, reduce the possibility of an accidental release of a hazardous material on board an aircraft and reduce the possibility of an accident that could result in injuries, fatalities and property damage. The National Transportation Safety Board (NTSB) accident database contains a listing of 10 accidents since 1986 involving hazardous materials. Nine of the accidents were non-fatal, three involved minor injuries, three resulted in substantial aircraft damage and two aircraft were destroyed. The tenth accident, the May 11, 1996 crash of Valujet Flight 592 in the Florida Everglades, resulted in the death of 110 passengers and crewmembers.

Excluding the Valujet crash, the cost of replacing or restoring these aircraft is estimated at $9.6 million. Other costs may also be incurred. In one reported incident an insurance company paid a carrier's insurance claim of approximately $40 million as a result of a hazardous material spill aboard a Boeing 747 freighter (cargo plane) on January 15,1998. A leak of a one-gallon jug of hydrogen peroxide aboard an Airbus 320 flight on October 28,1998 resulted in clean up costs estimated to be $40,000- $50,000. Future costs are likely to be higher. The FAA estimated the monetary loss of the Valujet accident to be $303 million.

If a single accident resulting in fatalities is prevented by adoption of this proposed amendment, the benefits of the amendment will more than offset potential industry costs. The cost impact from this change would be minimal. Initial start-up costs such as creating and applying the air eligibility mark would be offset by long-term savings and a 15-month transition period. Domestic companies engaged in international transportation of hazardous materials will realize long-term savings by eliminating the additional costs incurred when forced to conform to a dual system of regulations and by avoiding the potential for their shipments to be rejected by carriers that will only accept packages that are in accordance with the ICAO Technical Instructions. The

ICAO has adopted the requirement in the 2003-2004 edition of the ICAO Technical Instructions, and a number of packaging vendors and military shippers are currently marking packagings to indicate that they meet the additional air requirements through the use of an air eligibility symbol, such as we are proposing, or by use of the statement "Air Eligible." In lieu of using a durable sticker or label, or preprinting the marking on the packaging, the marking could be applied by drawing it on the package by hand provided it is durable, legible, and of such size relative to the packaging as to be readily visible. Additional training resulting from this change generally can be accomplished within the existing three-year training cycle, resulting in minimal additional training costs, if any.

Changes to shipping paper requirements. We are proposing to require that the types of packages being used to transport hazardous materials, such as drums, boxes, jerricans, or cylinders, be entered on shipping papers. We are also proposing to require the subsidiary hazard class or subsidiary divisions number(s) to be entered following the primary hazard class or division number on shipping papers for all modes of transportation. Currently, these requirements are applicable only to vessel shipments. Adoption of these revisions would provide effective tools for identification of the hazards associated with a specific shipment by hazardous material employees, thereby alerting them to specific handling requirements. Further, these revisions would enable emergency responders to more quickly and efficiently identify hazards, thereby facilitating more effective response measures to incidents and reducing the possibility of a release. RSPA was petitioned by a number of emergency response organizations to incorporate the mandatory indication of subsidiary risk on shipping papers this amendment into its regulations. These organizations indicated that this change would enhance their ability to expediently and effectively implement the appropriate response actions in the event of a hazardous materials incident.

The cost impact from these changes would be minimal. We estimate the total first year annual start up cost to be $1,115,902, and subsequent annual burden costs to be $216,705. Initial costs would be incurred to effect the changes in reprogramming computer systems that generate shipping papers, or replacement of pre-printed forms for those firms that do not use automated systems to generate shipping papers. Changes would also be required to package markings and labels. These initial start-up costs, however, would be offset by long-term savings and a 15-month transition period. Domestic companies engaged in international transportation of hazardous materials would experience long-term savings by eliminating the additional costs incurred when forced to conform to dual systems of regulations.

The training resulting from the proposed changes can, in most cases, be accomplished with the existing three-year training cycle, resulting in minimal additional training costs, if any. With respect to the proposed amendment requiring the type of packaging(s) to be entered on shipping papers, we are specifically asking for comments to address the impact that the proposed amendment may have on businesses, including suggestions to minimize any impact, such as incorporating an extended transition period for this particular change.

Overall Assessment

Because of the broad scope of this rulemaking, which affects numerous aspects of hazardous materials transportation and thousands of shippers, carriers, freight forwarders and packaging manufacturers, and because of the high degree of speculation involved in estimating costs and benefits of facilitating international shipments of hazardous materials, RSPA has focused primarily on a qualitative macroscopic analysis of costs and benefits. In effect, we are relying to a large extent on assumptions and estimates identified in the October 15, 1990 Final Regulatory Evaluation prepared in support of Docket HM-181 (Performance-Oriented Packaging Standards); RSPA's initial rulemaking project designed to harmonize the HMR with international standards. Our analysis in this current rulemaking action leads us to conclude, as we did in Docket HM-181, that this action is not a significant rule under Executive Order 12866, and that transportation costs will not significantly change following adoption of these amendments. Though not quantified, we are confident that costs associated with implementing these rules will be outweighed by their benefits.

Harmonizing the HMR with international regulations enables RSPA to honor U.S. international obligations under treaties such as the Chicago Convention on International Civil Aviation. Through both law and policy, it has been decided that standards-related activities shall not be a barrier to trade. Title IV of the Trade Agreements Act of 1979 (P.L.96-39; 19 U.S.C. 2532) addressing technical barriers to trade states that:

> No Federal agency may engage in any standards-related activity that creates unnecessary obstacles to the foreign commerce of the United States,...Each Federal agency, in developing standards, shall take into consideration international standards and shall, if appropriate, base the standards on international standards....Each Federal agency shall, if appropriate, develop standards based on performance criteria, such as those relating to the intended use of a product and the level of performance that product must achieve under defined conditions, rather than on design criteria, such as those relating to the physical form of the product or the type of material of which the product is made.

Uniform international rules and standards removes the dual system of regulations that often confuses international shippers, leads to non-compliance, and puts shippers at an economic disadvantage. The requirements in this rulemaking, if adopted, would benefit shippers and distributors by developing more cost-effective shipping practices. Benefits resulting from this rule would include enhanced safety and continued access to foreign markets. We have determined that the intended benefits of harmonizing the HMR with international standards outweigh the minimal, initial increase in costs to industry, which as discussed earlier in this

evaluation, would be offset by long-term savings and a 15-month transition period.

Impact on Small Businesses

The Regulatory Flexibility Act (5 U.S.C. 601-611) requires each agency to analyze proposed regulations and assess their impact on small businesses and other small entities to determine whether the proposed rule is expected to have a significant impact on a substantial number of small entities. This proposed rule applies to offerors and carriers of hazardous materials, some of whom are small entities, such as chemical users and suppliers, packaging manufacturers, distributors, and training companies.

The majority of the costs associated with this proposed rule are considered minimal, should result in cost savings to all affected entities, and would ease the regulatory compliance burden for shippers engaged in international commerce, including trans-border shipments within North America. For example, as a result of eliminating the differences between proper shipping names and hazard classification, including subsidiary hazards, shippers and carriers would not have to re-mark or repackage hazardous materials that are offered in both domestic and international transportation. Shipping papers would not need to be revised when shipping descriptions differ in domestic and international regulations. Providing certain exceptions, including a placarding exception for sulfur and molten sulfur when the UN number is displayed on bulk packagings, and a packaging exception for large hard-cased robust lithium batteries would result in immediate costs savings. We are also proposing to authorize immediate voluntary compliance, a delayed effective date, and a 15-month transition period to allow for training of hazmat employees to ease the minimal burden on entities affected by the adoption of the proposed amendments.